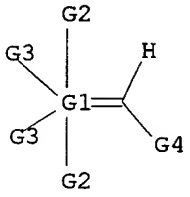
(FILE 'HOME' ENTERED AT 12:14:19 ON 10 OCT 1997)

FILE 'REGISTRY' ENTERED AT 12:14:25 ON 10 OCT 1997
L1 SCREEN 1977
L2 SCREEN 2127
L3 SCREEN 2049
L4 STRUCTURE UPLOADED
L5 QUE L4 AND L3 NOT L1 NOT L2

=> d l5

'L5' HAS NO ANSWERS
L1 SCR 1977
L2 SCR 2127
L3 SCR 2049
L4 STR



G1 Os,Ru

G2 H,O,S,N,P,As,Sb

G3 X,Cb,Ak,H,Ph,o-C6H4,OH,SH,MeO,EtO,n-PrO,PhO

G4 H,Me,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Ph,o-C6H4,m-C6H4,p-C6H4

Structure attributes must be viewed using STN Express query preparation.
L5 QUE L4 AND L3 NOT L1 NOT L2

=> s l5

SAMPLE SEARCH INITIATED 12:15:36
SAMPLE SCREEN SEARCH COMPLETED - 8669 TO ITERATE
11.5% PROCESSED 1000 ITERATIONS 2 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.02

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 167822 TO 178938
PROJECTED ANSWERS: 97 TO 595

L6 2 SEA SSS SAM L4 AND L3 NOT L1 NOT L2

=> s l5 full

FULL SEARCH INITIATED 12:15:52
FULL SCREEN SEARCH COMPLETED - 173433 TO ITERATE
28.2% PROCESSED 48893 ITERATIONS (1 INCOMPLETE) 61 ANSWERS
49.8% PROCESSED 86364 ITERATIONS (2 INCOMPLETE) 131 ANSWERS

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 57.0% PROCESSED   98921 ITERATIONS  (     2 INCOMPLETE)     136 ANSWERS
 57.7% PROCESSED  100000 ITERATIONS  (     2 INCOMPLETE)     136 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.01.04

FULL FILE PROJECTIONS:  ONLINE  **INCOMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:       173433 TO   173433
PROJECTED ANSWERS:             189 TO      281

L7          136 SEA SSS FUL L4 AND L3 NOT L1 NOT L2

=> fil ca

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   111.28     111.43

FILE 'CA' ENTERED AT 12:17:04 ON 10 OCT 1997
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FILE COVERS 1967 - 7 Oct 1997 (971007/ED)  VOL 127 ISS 15

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

=> s l7

L8          95 L7

=> s l8 and py<=1994

      12128212 PY<=1994
L9          13 L8 AND PY<=1994

=> d 1-13 bib abs


L9   ANSWER 1 OF 13  CA  COPYRIGHT 1997 ACS
AN   122:160379  CA
TI   Ruthenium catalyzed enyne metathesis
AU   Kinoshita, Atsushi; Mori, Miwako
CS   Fac. Pharm. Sci., Hokkaido Univ., Sapporo, 060, Japan
SO   Synlett (1994), (12), 1020-22
     CODEN: SYNLES; ISSN: 0936-5214
DT   Journal
LA   English
OS   CASREACT 122:160379
GI
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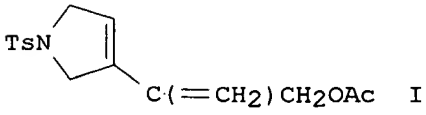
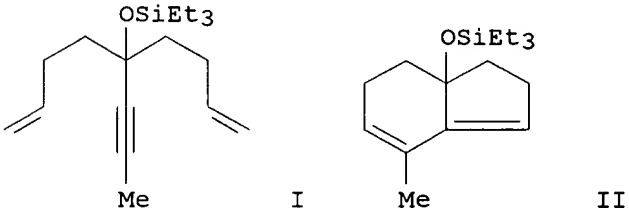


I

AB Enyne metathesis reaction was realized utilizing a ruthenium catalyst reported by Grubbs (1993). Thus, five-, six- and seven-membered heterocycles, e.g. I, were synthesized from enynes, e.g. CH2:CHCH2N(Ts)CH2C.tplbond.CCH2OAc, in good yields.

L9 ANSWER 2 OF 13 CA COPYRIGHT 1997 ACS
AN 122:81462 CA
TI Catalytic Ring Closing Metathesis of Dienynes: Construction of Fused Bicyclic Rings
AU Kim, Soong-Hoon; Bowden, Ned; Grubbs, Robert H.
CS Arnold and Mabel Beckman Laboratory of Chemical Synthesis, California Institute of Technology, Pasadena, CA, 91125, USA
SO J. Am. Chem. Soc. (**1994**), 116(23), 10801-2
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
OS CASREACT 122:81462; CJACS-IMAGE; CJACS
GI

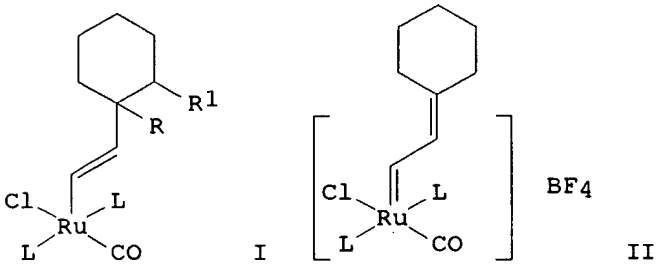


AB Ru carbene Cl2(PCy3)2Ru:CHCH:CPh2 mediates the efficient conversion of acyclic dienynes, e.g., I, to fused bicyclic [n.m.0] rings contg. 5, 6 and 7 membered rings, e.g., II. With unsym. dienynes, the olefin substitution regulates the selective formation of a single fused bicyclic ring. These observations further expand the scope of catalytic ring closing metathesis for the construction of complex org. compds.

L9 ANSWER 3 OF 13 CA COPYRIGHT 1997 ACS
AN 122:10702 CA
TI Ring-opening metathesis polymerization catalysts
AU Grubbs, Robert H.; Hillmyer, Marc; Benedicto, Alto; Wu, Zhe
CS Div. Chem. Chem. Eng., California Inst. Technol., Pasadena, CA, 91125, USA
SO Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.) (**1994**), 35(1), 688
CODEN: ACPPAY; ISSN: 0032-3934
DT Journal; General Review
LA English
AB A review with 6 refs. describing the effectiveness of ruthenium complexes in ring-opening metathesis polymn. of various cyclic compds.

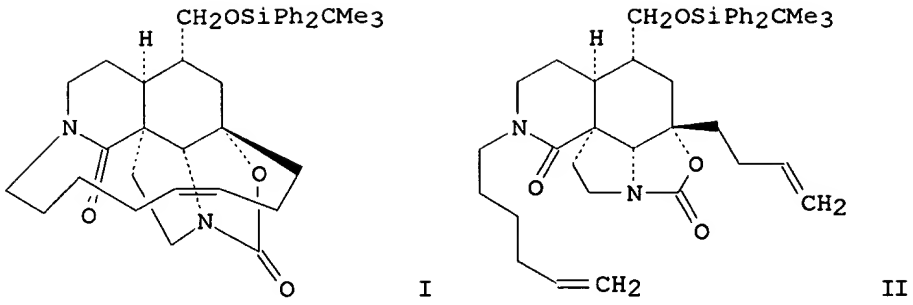
L9 ANSWER 4 OF 13 CA COPYRIGHT 1997 ACS
AN 121:280836 CA
TI Reactions of RuHCl(CO)(PiPr3)2 with Alkyn-1-ols: Synthesis of Ruthenium(II) Hydroxyvinyl and Vinylcarbene Complexes
AU Esteruelas, Miguel A.; Lahoz, Fernando J.; Onate, Enrique; Oro, Luis A.; Zeier, Bernd
CS Instituto de Ciencia de Materiales de Aragon, Universidad de Zaragoza, Zaragoza, 50009, Spain

SO Organometallics (**1994**), 13(11), 4258-65
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
OS CASREACT 121:280836; CJACS-IMAGE; CJACS
GI



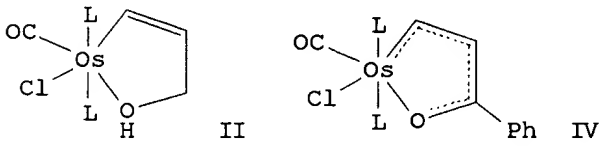
AB The monohydrido complex RuHCl(CO)(L)2 (1, L = (Me2CH)3P throughout this abstr.) reacts with HC.tplbond.CC(OH)R1R2 to give the hydroxyvinyl compds. RuCl{(E)-CH:CHC(OH)R1R2}(CO)(L)2 (R1 = R2 = H (2); R1 = H, R2 = Ph (3); R1 = R2 = Ph (4)), which by reaction with HBF4 afford [RuCl(:CHCH:CR1R2)(CO)(L)2]BF4 (R1 = H, R2 = Ph (5); R1 = R2 = Ph (6)). The former cationic compds. react with NaCl to give RuCl2(:CHCH:CR1R2)(CO)(L)2 (R1 = H, R2 = Ph (7); R1 = R2 = Ph (8)). The mol. structure of 6 was detd. by x-ray crystallog. The geometry around the ruthenium atom can be described as a square pyramid with the alkylidene ligand located in the apex. The base is formed by the carbonyl ligand and the chlorine atom mutually trans disposed, with two triisopropylphosphine groups. The complexes 2-4 react with CO to give the cis-dicarbonyl compds. RuCl{(E)-CH:CHC(OH)R1R2}(CO)2(L)2 (R1 = R2 = H (9); R1 = H, R2 = Ph (10); R1 = R2 = Ph (11)). The reaction of 1 with 1-ethynyl-1-cyclohexanol affords ruthenium complex I (R = H, R1 = OH), which after 4 days in toluene at 60.degree. gives I (RR1 = bond). The reaction of I (RR1 = bond) with HBF4 leads to vinylcarbene complex II, which can also be obtained from the reaction of I (R = H, R1 = OH) with HBF4.

L9 ANSWER 5 OF 13 CA COPYRIGHT 1997 ACS
AN 121:109359 CA
TI The first synthesis of the ABCD ring system of manzamine A. Construction of the macrocyclic ring D
AU Borer, Bennett C.; Deerenberg, Sirik; Bieraeugel, Hans; Pandit, Upendra K.
CS Lab. Org. Chem., Univ. Amsterdam, Amsterdam, 1018 WS, Neth.
SO Tetrahedron Lett. (**1994**), 35(19), 3191-4
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 121:109359
GI



AB The synthesis of the ABCD ring system I of manzamine A has been achieved using the olefin metathesis cyclization reaction of II for the crucial macrocyclic ring D formation step.

L9 ANSWER 6 OF 13 CA COPYRIGHT 1997 ACS
AN 121:35835 CA
TI Reactions of OsHCl(CO)(PiPr3)2 with Alkyn-1-ols: Synthesis of (Vinylcarbene)osmium(II) Complexes
AU Esteruelas, Miguel A.; Lahoz, Fernando J.; Onate, Enrique; Oro, Luis A.; Zeier, Bernd
CS Instituto de Ciencia de Materiales de Aragon, Universidad de Zaragoza, Zaragoza, 50009, Spain
SO Organometallics (**1994**), 13(5), 1662-8
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
OS CASREACT 121:35835; CJACS-IMAGE; CJACS
GI



AB The monohydride complex OsHCl(CO)L2 [I, L = P(CHMe2)3 through out this abstr.] reacts with 2-propyn-1-ol to give the vinyl compd. II. The reaction of I with 1-phenyl-2-propyn-1-ol leads to a mixt. of products, from which the complexes OsCl2(:CHCH:CHPh)(CO)L2 (III) and heterocycle IV were sepd. The mol. structures of complexes III and IV were detd. by x-ray crystallog. The coordination around the osmium atom in III can be described as a distorted octahedron with the two triisopropylphosphine ligands occupying trans positions; the perpendicular plane is defined by the vinylcarbene and a carbonyl ligand, mutually cis disposed, and by two chloride atoms. The osmium coordination environment in IV can also be rationalized as a distorted octahedron with the two phosphine ligands disposed mutually trans. The remaining coordination sites of the octahedron are occupied by the carbonyl ligand, the chloride atom, and the chelate CHCHC(O)Ph ligand. The reaction of I with 1,1-diphenyl-2-propyn-1-ol also leads to a mixt. of products, from which the complex OsCl2(:CHCH:CPh2)(CO)L2 was isolated and characterized.

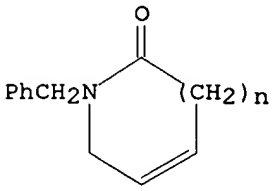
L9 ANSWER 7 OF 13 CA COPYRIGHT 1997 ACS
AN 120:299528 CA
TI Ruthenium and osmium metal carbene complexes for cycloolefin metathesis polymerization

IN Grubbs, Robert Howard; Johnson, Lynda Kaye; Nguyen, Sonbinh Thebao
PA du Pont de Nemours, E. I., and Co., USA; California Institute of Technology
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
PI WO 9320111 A2 **931014**
DS W: JP, KR
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
AI WO 93-US3425 930405
PRAI US 92-863606 920403
DT Patent
LA English
OS MARPAT 120:299528
AB The title compds. bear Os or Ru atoms in the +2 oxidn. state and are stable in the presence of protic solvents, and are useful as high activity ring-opening metathetic catalysts for polymn. of cycloolefins. A catalyst was prepd. by reaction of tetrakis(triphenylphosphine)ruthenium dichloride and 3,3-diphenylcyclopropene and was used to polymerize norbornene.

L9 ANSWER 8 OF 13 CA COPYRIGHT 1997 ACS
AN 120:107300 CA
TI Conformation of d6 carbene complexes in an asymmetric octahedral field. II
AU Maouche, Boubekeur; Volatron, Francois; Jean, Yves
CS Inst. Chim., Univ. Sci. Technol. Houari Boumedienne, Algiers, Algeria
SO New J. Chem. (**1993**), 17(7), 449-53
CODEN: NJCHE5; ISSN: 1144-0546
DT Journal
LA French
AB The conformation of d6 carbene complexes in asym. octahedral ligand fields [M(PH3)2(Cl)2(X)(CY2), X = CO, Cl-; Y = H, Cl] is studied by means of Extended Hueckel calcns. First, model complexes are studied in order to analyze the relative strength of back donation and steric repulsion, depending on the substitution pattern of the metal and the carbene. For X = Cl-, back donation and steric effects work in opposite directions. In the unsubstituted case (Y = H), the two factors almost cancel and no marked preference is found. For the deactivated carbene (Y = Cl), steric effects dominate and the carbene plane lies between the C-M-Cl and C-M-PH3 planes, and closer to the former. For X = CO, the back donation interaction and the steric effects favor (weakly and strongly, resp.) the conformation with the carbene coplanar with the CO-M-Cl linkage. Calcns. on models for exptl. complexes confirm these trends and are in agreement with available exptl. data.

L9 ANSWER 9 OF 13 CA COPYRIGHT 1997 ACS
AN 120:9085 CA
TI Syntheses and activities of new single-component, ruthenium-based olefin metathesis catalysts
AU Nguyen, SonBinh T.; Grubbs, Robert H.; Ziller, Joseph W.
CS Div. Chem. Chem. Eng., California Inst. Technol., Pasadena, CA, 91125, USA
SO J. Am. Chem. Soc. (**1993**), 115(21), 9858-9
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
OS CJACS-IMAGE; CJACS
AB (Iso-Pr3P)2Cl2Ru:CHCH:CPh2 (I) is prepd. in good yield from (Ph3P)2Cl2Ru:CHCH:CPh2 (II). While I shares the stability of II in the presence of aq./protic solvents, it is several orders of magnitude more active as an olefin metathesis catalyst. In contrast to II, I catalyzes the metathesis of cis-2-pentene. I also catalyzes the ring-opening metathesis polymn. of norbornene.

L9 ANSWER 10 OF 13 CA COPYRIGHT 1997 ACS
AN 119:270983 CA
TI Catalytic ring-closing metathesis of functionalized dienes by a ruthenium carbene complex
AU Fu, Gregory C.; Nguyen, SonBinh T.; Grubbs, Robert H.
CS Arnold and Mabel Beckman Lab. Chem. Synth., California Inst. Technol., Pasadena, CA, 91125, USA
SO J. Am. Chem. Soc. (**1993**), 115(21), 9856-7
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
OS CASREACT 119:270983; CJACS-IMAGE; CJACS
GI



II

AB Ruthenium carbene Ph2C:CHC:Ru(PCy3)2Cl2 (I; Cy = cyclohexyl) catalyzes the cyclization of a wide range of functionalized dienes, affording five-, six-, and seven-membered heterocycles and carbocycles in good yield. Thus, treatment of N-allylalkenylamides H2C:CH(CH2)nCON(CH2Ph)CH2CH:CH2 (n = 0-2) with 2-4 mol% I at room temp. in benzene gave unsatd. lactams II in 78-91% yields. The ruthenium-catalyzed metathesis reaction is significantly less sensitive than is the corresponding molybdenum-catalyzed process; it is tolerant of carboxylic acids, alcs., aldehydes, and amine salts, and it can be effected in air.

L9 ANSWER 11 OF 13 CA COPYRIGHT 1997 ACS
AN 119:117888 CA
TI Living ring-opening metathesis polymerization of bicyclo[3.2.0]heptene catalyzed by a ruthenium alkylidene complex
AU Wu, Zhe; Benedicto, Alto D.; Grubbs, Robert H.
CS Arnold and Mabel Beckman Lab. Chem. Synth., California Inst. Technol., Pasadena, CA, 91125, USA
SO Macromolecules (**1993**), 26(18), 4975-7
CODEN: MAMOBX; ISSN: 0024-9297
DT Journal
LA English
OS CJACS-IMAGE; CJACS
AB The complex (PPh3)2(Cl)2Ru(:CH-CH:CPh2) catalyzes the living ring-opening metathesis polymn. of bicyclo[3.2.0]heptene. The starting alkylidene initiates completely during the polymn. and the propagating alkylidenes are stable throughout the polymn. The polymer obtained has a narrow polydispersity of 1.2, and the mol. wts. are proportional to the ratio of monomer/catalyst. Diblock and triblock copolymers can be prepd. by the sequential addn. of either bicyclo[3.2.0]heptene or norbornene.

L9 ANSWER 12 OF 13 CA COPYRIGHT 1997 ACS
AN 116:194941 CA
TI Ring-opening metathesis polymerization (ROMP) of norbornene by a Group VIII carbene complex in protic media
AU Nguyen, SonBinh T.; Johnson, Lynda K.; Grubbs, Robert H.; Ziller, Joseph W.
CS Div. Chem. Chem. Eng., California Inst. Technol., Pasadena, CA,

91125, USA
SO J. Am. Chem. Soc. (**1992**), 114(10), 3974-5
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
OS CJACS-IMAGE; CJACS
AB The complex (Ph3P)2Cl2Ru=CHCH=CPh2 (I) is prepd. in quant. yield by the reaction of 3,3-diphenylcyclopropene with either RuCl2(PPh3)3 or RuCl2(PPh3)4. Complex I polymerizes norbornene in org. media both in the absence and presence of protic/aq. solvents. In both solvent systems, a stable propagating carbene species can be obsd. throughout the course of the polymn., as was previously found with Ti, Ta, W, Mo, and Rh complexes. These observations establish metal carbene species as viable intermediates in the ROMP of bicyclic olefins catalyzed by classical Ru coordination complexes in protic solvents.

L9 ANSWER 13 OF 13 CA COPYRIGHT 1997 ACS
AN 114:16467 CA
TI Behavior of di-.mu.-acetato-tetracarbonylbis(tributylphosphine)dirut henium in the presence of hydrogen: synthesis and x-ray structure of polynuclear ruthenium carbonyl hydrides containing an encapsulated phosphide ligand
AU Frediani, Piero; Bianchi, Mario; Salvini, Antonella; Piacenti, Franco; Ianelli, Sandra; Nardelli, Mario
CS Dip. Chim. Org., Univ. Firenze, Florence, I-50121, Italy
SO J. Chem. Soc., Dalton Trans. (**1990**), (5), 1705-16
CODEN: JCDTBI; ISSN: 0300-9246
DT Journal
LA English
OS CJRSC
AB [Ru2(CO)4(.mu.-OAc-O,O')2(PBu3)2 under H (170 atm), at 140-200.degree., undergoes rearrangements. Several phosphine- and phosphide-substituted Ru carbonyl hydrides are formed. Among them, [Ru3(.mu.-H)2(CO)7(.mu.3-PBu)(PBu3)2] (I), [Ru6(.mu.-H)6(.mu.-CO)(CO)12(.mu.-PBu2)(PBu3)2(.mu.6-P)] (II), and [Ru7(.mu.-H)8(CO)12(.mu.3-PBu)(.mu.-PBu2)(PBu3)3(.mu.6-P)] (III) were isolated and identified. The x-ray crystal structure analyses performed on the 3 new products showed boat metal clusters for the last 2, contg. an encapsulated P3- ligand. I and II are trinclinic, space group P.hivin.1, Z = 2 and 4, R = 0.0362 and 0.0526 and R' = 0.0497 and 0.0659, resp. III is monoclinic, space group P21/n, Z = 4, R = 0.0589, R' = 0.0587.

(FILE 'HOME' ENTERED AT 14:17:00 ON 10 OCT 1997)

FILE 'CA' ENTERED AT 14:17:08 ON 10 OCT 1997
L1 672 S METAL CARBENE
L2 26 S L1 AND RUTHENIUM

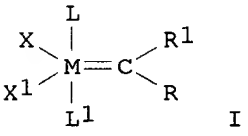
=> s l1 and osmium

13373 OSMIUM
L3 8 L1 AND OSMIUM

=> d 1-8 bib abs

L3 ANSWER 1 OF 8 CA COPYRIGHT 1997 ACS
AN 126:238816 CA
TI High metathesis activity ruthenium and **osmium** **metal carbene** complexes and their manufacture
IN Grubbs, Robert H.; Schwab, Peter; Nguyen, Sonbinh T.
PA California Institute of Technology, USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
PI WO 9706185 A1 970220
DS UG, W UZ, W VN, W AM, W AZ, W BY, W KG, W KZ, W MD, W RU, W TJ, W TMEE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, NL, PT, SE
AI WO 96-US12654 960801
PRAI US 95-1862 950803
US 95-3973 950919
US 96-693789 960731
DT Patent
LA English
OS MARPAT 126:238816
AB Ruthenium and **osmium** carbene compds. that are stable in the presence of a variety of functional groups can be used to catalyze olefin metathesis reactions on unstrained cyclic and acyclic olefins. The carbene compds. are of formula XX1LL1M:CRR1, where M = Os or Ru; R1 = H; R = H, (un)substituted alkyl, and (un)substituted aryl; X and X1 = anionic ligand; and L and L1 = neutral electron donor. The ruthenium and **osmium** carbene compds. may be synthesized using diazo compds., by neutral electron donor ligand exchange, by cross metathesis, using acetylene, using cumulated olefins, and in a one-pot method using diazo compds. and neutral electron donors. The carbene compds. may be used to catalyze olefin metathesis reactions including, but not limited to ROMP, RCM, depolymn. of unsatd. polymers, synthesis of telechelic polymers, and olefin synthesis. Stirring a soln. of RuCl2(PPh3)3 in CH2Cl2 at -78.degree. and treating with a soln. of phenyldiazomethane in CH2Cl2 at -50.degree. gave a green microcryst. solid of Ru(:CHPh)Cl2(PPh3)2. The solid was used to polymerize norbornene with 95-99% yield and polydispersity 1.04-1.10.

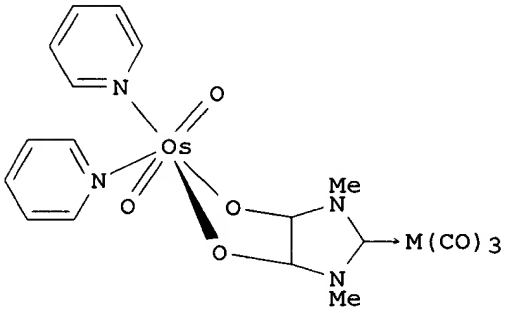
L3 ANSWER 2 OF 8 CA COPYRIGHT 1997 ACS
AN 125:58749 CA
TI High activity ruthenium or **osmium metal carbene** complexes for olefin metathesis reactions and synthesis thereof
IN Grubbs, Robert H.; Nguyen, Sonbinh T.; Johnson, Lynda K.; Hillmyer, Marc A.; Fu, Gregory C.
PA California Institute of Technology, USA
SO PCT Int. Appl., 27 pp.
CODEN: PIXXD2
PI WO 9604289 A1 960215
DS W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG
AI WO 95-US9655 950728
PRAI US 94-282826 940729
US 94-282827 940729
DT Patent
LA English
OS CASREACT 125:58749; MARPAT 125:58749
GI



I

AB Ru and Os carbene compds. which are stable in the presence of a variety of functional groups and which can be used to catalyze olefin methathesis reactions are discussed. Methods for synthesizing these carbene compds. are also disclosed. For example, 1.73 mmol [(cymene)RuCl2]2, 2 equiv PCy3 and 1 equiv 3,3-diphenylcyclopropene react in benzene at 83-85.degree. for 6 h to give 88% Cl2Ru(:CHCH:CPh2)(PCy3)2 (I). Phosphoranes, R4R5R6P:CRR1, can be used in place of cyclopropenes. Specifically, the present invention relates to carbene compds. I wherein: M is Os or Ru; R and R1 are independently selected from H; C2-C20 alkenyl, C2-C20 alkynyl, C1-C20 alkyl, aryl, C1-C20 carboxylate, C2-C20 alkoxy, C2-C20 alkenyloxy, C2-C20 alkynyloxy, aryloxy, C2-C20 alkoxycarbonyl, C1-C20 alkylthio, C1-C20 alkylsulfonyl or C1-C20 alkylsulfinyl; each optionally substituted with C1-C5 alkyl, halogen, C1-C5 alkoxy or with a Ph group optionally substituted with halogen, C1-C5 alkyl or C1-C5 alkoxy; X and X1 are independently selected from any anionic ligand; and L and L1 are each trialkylphosphine ligands where at least one of the alkyl groups on the phosphine is a secondary alkyl or a cycloalkyl. In a preferred embodiment, all of the alkyl groups of the trialkylphosphine are either a secondary alkyl or a cycloalkyl. In a more preferred embodiment, the alkyl groups are either iso-Pr, iso-Bu, sec-Bu, neopentyl, neophenyl, cyclopentyl or cyclohexyl. Reactions catalyzed by the above complexes include ring-opening metathesis polymn. of strained and unstrained cyclic olefins, ring closing metathesis of acyclic dienes, cross metathesis reactions involving at least one acyclic or unstrained cyclic olefin and depolymn. of olefinic polymers. For example, 0.50 mmol CH2:CHCH2OCHPhCH2CH:CH2 was converted in 86% yield to the dihydropyran in benzene in the presence of I after 5 h at 20.degree.. Telechelic polymers can be prepd. using the above complexes as catalysts.

L3 ANSWER 3 OF 8 CA COPYRIGHT 1997 ACS
AN 122:187782 CA
TI Oxy Functionalization of Metal-Coordinated Heterocyclic Carbenes
AU Herrmann, Wolfgang A.; Roesky, Peter W.; Elison, Martina; Artus, Georg; Oefele, Karl
CS Anorganisch-chemisches Institut, Technischen Universitaet Muenchen, Garching, D-85747, Germany
SO Organometallics (1995), 14(3), 1085-6
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
OS CASREACT 122:187782; CJACS-IMAGE; CJACS
GI



I

AB Metal-coordinated 1,3-dimethylimidazolin-2-ylidene ligands undergo osmylation by **osmium** tetraoxide to yield a new type of bimetallic, redox-stable complexes I (M = Cr, Mo, W) with metals in very different oxidn. states (e.g. Cr0/OsVI). This oxy functionalization does not influence the **metal-carbene** bond in a significant way (IR and NMR spectra). The single-crystal x-ray diffraction structure of I (M = Cr) was detd.

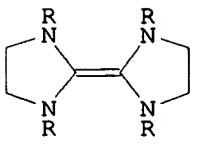
L3 ANSWER 4 OF 8 CA COPYRIGHT 1997 ACS
AN 120:299528 CA
TI Ruthenium and **osmium metal carbene** complexes for cycloolefin metathesis polymerization
IN Grubbs, Robert Howard; Johnson, Lynda Kaye; Nguyen, Sonbinh Thebao
PA du Pont de Nemours, E. I., and Co., USA; California Institute of Technology
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
PI WO 9320111 A2 931014
DS W: JP, KR
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
AI WO 93-US3425 930405
PRAI US 92-863606 920403
DT Patent
LA English
OS MARPAT 120:299528
AB The title compds. bear Os or Ru atoms in the +2 oxidn. state and are stable in the presence of protic solvents, and are useful as high activity ring-opening metathetic catalysts for polymn. of cycloolefins. A catalyst was prepd. by reaction of tetrakis(triphenylphosphine)ruthenium dichloride and 3,3-diphenylcyclopropene and was used to polymerize norbornene.

L3 ANSWER 5 OF 8 CA COPYRIGHT 1997 ACS
AN 107:134767 CA
TI Metathesis polymerization of exo,exo-, endo,exo- and

endo,endo-5,6-dimethylbicyclo[2.2.1]hept-2-enes; microstructure of the polymers and their hydrogenated products
AU Greene, Ruth M. E.; Ivin, Kenneth J.; McCann, G. Malachy; Rooney, John J.
CS Dep. Chem., Queen's Univ. Belfast, Belfast, BT9 5AG, UK
SO Makromol. Chem. (1987), 188(8), 1933-50
CODEN: MACEAK; ISSN: 0025-116X
DT Journal
LA English
AB Polymers of exo,exo-, endo,exo- and endo,endo-5,6-dimethylbicyclo[2.2.1]hept-2-ene monomers were prepd. using a selection of 8 metathesis catalysts, and their structures were examd. by 13C-NMR spectroscopy. Tacticities could be detd. for the polymers of the endo,endo and endo,exo monomers and for all 3 hydrogenated polymers. RuCl3 gave high-trans atactic polymers while ReCl5 gave high-cis syndiotactic polymes, but WCl6/Bu4Sn gave a high-cis atactic polymer of the endo,endo monomer. The endo,exo monomer was unusual in giving polymers of relatively low cis content (fraction of cis double bonds .sigma.c .ltoreq. 0.3), and with strong exo,endo bias except in the case of RuCl3. Polymers of the exo,exo and endo,endo monomers have a blocky cis/trans double bond distribution at moderate cis content. The results were discussed in terms of a mechanism involving propagation by **metal-carbene**, **metal-carbene**-olefin, and metallacyclobutane complexes.

L3 ANSWER 6 OF 8 CA COPYRIGHT 1997 ACS
AN 106:196576 CA
TI Arene(phosphine)metal complexes. XI. Five-membered **osmium** heterocycles from alkyne insertion into an **osmium**-iodine or **osmium**-hydrogen bond
AU Werner, H.; Weinand, R.; Otto, H.
CS Inst. Anorg. Chem., Univ. Wuerzburg, Wuerzburg, D-8700, Fed. Rep. Ger.
SO J. Organomet. Chem. (1986), 307(1), 49-59
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA German
OS CASREACT 106:196576
GI For diagram(s), see printed CA Issue.
AB The reaction of equimolar amts. of C6H6Os[P(CHMe2)3]I2, AgPF6 and RC.tplbond.CCO2Me (R = H, Me, CO2Me) gives heterocycle I (X = iodo, same R). The reaction of C6H6OsH[P(CHMe2)3]I, AgPF6 and HC.tplbond.CCO2Me produces I (X = R = H). The x-ray structure anal. of I (X = iodo, R = H) shows that the cation contains a 5-membered metallaheterocycle which is obtained by insertion of the alkyne into 1 of the Os-I bonds. The OsC3O ring is almost planar. The distance Os-C(1) [202(1) pm] lies between that of a Os-C single and a Os:C double bond thus indicating that for the bonding pattern of the heterocycle a resonance form with a **metal-carbene** bond must be considered.

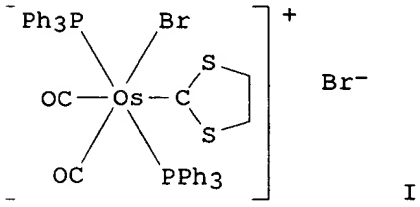
L3 ANSWER 7 OF 8 CA COPYRIGHT 1997 ACS
AN 89:215526 CA
TI Carbene complexes. Part 15. The synthesis and properties of electron-rich olefin-derived mono- and oligo-carbenenitrosylruthenium, -**osmium** and -nickel complexes
AU Lappert, Michael F.; Pye, Peter L.
CS Sch. Mol. Sci., Univ. Sussex, Brighton, Engl.
SO J. Chem. Soc., Dalton Trans. (1978), (7), 837-44
CODEN: JCDTBI; ISSN: 0300-9246
DT Journal
LA English
GI



I

AB MCl3(NO)(PPh3)2 (M = Ru, Os), MCl(NO)(PPh3)2 (M = Ru, Ni), and Ru(NO)2(PPh3)2 reacted with the carbenes I (R = Me, Et, CH2Ph) to give carbenenitrosylmetal complexes, e.g. RuClL2(NO) (L2 = I, R = CH2Ph), and [ML4(NO)]Cl (M = Ru, Os, R = Me), which were characterized by anal. and IR and NMR spectra. Many of the complexes had complicated NMR spectra due to the inequivalence of N-CH2Ph protons or N-CH3 groups caused by restricted rotation. The reactivities of the carbenenitrosylmetal complexes with Ag+, CO, MeI, I2, Br2, and PhCH2Cl were studied. As the metal charge increases, .nu.(CN2), complex stability, and the barrier to Ru-C(carbene) rotation all increase, .delta.[13C(carbene)] becomes more shielded, and the carbene ligand increases in amidinium nature.

L3 ANSWER 8 OF 8 CA COPYRIGHT 1997 ACS
AN 84:135795 CA
TI Cyclic transition-**metal carbene** complexes from ring-closing reactions on the .pi.-bound substrates carbon disulfide and carbon diselenide. 1,3-Dithiolan-2-ylidene and 1,3-diselenolan-2-ylidene complexes of ruthenium(II) and **osmium**(II)
AU Collins, T. J.; Grundy, K. R.; Roper, W. R.; Wong, S. F.
CS Dep. Chem., Univ. Auckland, Auckland, N. Z.
SO J. Organomet. Chem. (1976), 107(3), C37-C39
CODEN: JORCAI
DT Journal
LA English
GI



I

AB Os(CS2)(CO)2(PPh3)2, Os(CS2)(CO)(CNC6H4Me-p)(PPh3)2, Ru(CS2)(CO)(CNC6H4Me-p)-(PPh3)2 and Ru(CSe2)(CO)2(PPh3)2 react with 1,2-dibromoethane to give cationic and neutral 1,3-dithiolan-2-ylidene and 1,3-diselenolan-2-ylidene complexes (e.g. I).